



20010-06USA.ST25.txt
SEQUENCE LISTING

<110> POSCO
POSTECH Foundation
CHA, Hyung Joon
HWANG, Dong Soo

<120> Mussel Bioadhesive

<130> 20010-06USA

<140> US 10/599,313
<141> 2006-09-20

<150> PCT/KR2005/000888
<151> 2005-03-25

<150> US 60/556,805
<151> 2004-03-26

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gtagatctat acgccggacc agtgaacag
29

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<400> 3
cttgatattt ccgctgtttt t
21

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<400> 4
 aaaaacagcg gaaaatacaa g
 21

<210> 5
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 <213> Mytilus galloprovincialis

<220>
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 <222> (1)..(228)
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 48
 Ser Ser Glu Glu Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Thr Tyr His
 1 5 10 15
 tat cat tca ggt ggt agt tat cac gga tcc ggc tat cat gga gga tat
 96
 Tyr His Ser Gly Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr
 20 25 30
 aag gga aag tat tac gga aag gca aag aaa tac tat tat aaa tat aaa
 144
 Lys Gly Lys Tyr Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys
 35 40 45
 aac agc gga aaa tac aag tat ctg aag aaa gct aga aaa tac cat aga
 192
 Asn Ser Gly Lys Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg
 50 55 60
 aag ggt tac aag aag tat tat gga ggt ggt agc agt
 228
 Lys Gly Tyr Lys Lys Tyr Tyr Gly Gly Gly Ser Ser
 65 70 75

<210> 6
 <211> 76
 <212> PRT
 <213> Mytilus galloprovincialis

<400> 6
 Ser Ser Glu Glu Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Thr Tyr His
 1 5 10 15

Tyr His Ser Gly Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr
 20 25 30
 Lys Gly Lys Tyr Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys
 35 40 45
 Asn Ser Gly Lys Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg
 50 55 60
 Lys Gly Tyr Lys Lys Tyr Tyr Gly Gly Gly Ser Ser
 65 70 75

<210> 7
 <211> 180
 <212> DNA
 <213> mytilus edulis
 <220>
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 <222> (1)..(180)
 <223> 6 times repeated sequence derived from mytilus edulis foot
 protein-1

<400> 7
 gct aaa ccg tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca
 48
 Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro
 1 5 10 15
 ccg act tat aag gct aaa cct agc tat cca cct acg tac aaa gct aaa
 96
 Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys
 20 25 30
 ccg tct tac ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc
 144
 Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr
 35 40 45
 tat aag gct aaa ccg agt tac ccc ccg act tac aaa
 180
 Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys
 50 55 60

<210> 8
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 <212> PRT
 <213> mytilus edulis

<400> 8
 Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro
 1 5 10 15
 Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys
 20 25 30
 Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr
 35 40 45
 Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys

50

55

60

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 <223> Bioadhesive protein(mgfp-150)

<400> 9
 gct aaa ccg tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca
 48
 Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro
 1 5 10 15

 ccg act tat aag gct aaa cct agc tat cca cct acg tac aaa gct aaa
 96
 Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys
 20 25 30

 ccg tct tac ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc
 144
 Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr
 35 40 45

 tat aag gct aaa ccg agt tac ccc ccg act tac aaa agt tct gaa gaa
 192
 Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ser Ser Glu Glu
 50 55 60

 tac aag ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt
 240
 Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly
 65 70 75 80

 ggt agt tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat
 288
 Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr
 85 90 95

 tac gga aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa
 336
 Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys
 100 105 110

 tac aag tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag
 384
 Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys
 115 120 125

 aag tat tat gga ggt agc agt gaa ttc
 411
 Lys Tyr Tyr Gly Gly Ser Ser Glu Phe
 130 135

<210> 10
 <211> 137
 <212> PRT
 <213> Artificial Sequence

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 Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro
 1 5 10 15
 Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys
 20 25 30
 Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr
 35 40 45
 Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ser Ser Glu Glu
 50 55 60
 Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly
 65 70 75 80
 Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr
 85 90 95
 Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys
 100 105 110
 Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys
 115 120 125
 Lys Tyr Tyr Gly Gly Ser Ser Glu Phe
 130 135

<210> 11
 <211> 411
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Bioadhesive protein(mgfp-051) coding sequence

<220>
 <221> CDS
 <222> (1)..(411)
 <223> Bioadhesive protein(mgfp-051)

<400> 11
 agt tct gaa gaa tac aag ggt ggt tat tac cca ggc aat tcg aac cac
 48
 Ser Ser Glu Glu Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His
 1 5 10 15
 tat cat tca ggt ggt agt tat cac gga tcc ggc tac cat gga gga tat
 96
 Tyr His Ser Gly Gly ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr
 20 25 30
 aag gga aag tat tac gga aag gca aag aaa tac tat tat aaa tat aaa

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144
Lys Gly Lys Tyr Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys
35 40 45

aac agc gga aaa tac aag tat cta aag aaa gct aga aaa tac cat aga
192
Asn Ser Gly Lys Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg
50 55 60

aag ggt tac aag aag tat tat gga ggt agc agt gaa ttc gct aaa ccg
240
Lys Gly Tyr Lys Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro
65 70 75 80

tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca ccg act tat
288
Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr
85 90 95

aag gct aaa cct agc tat cca cct acg tac aaa gct aaa ccg tct tac
336
Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr
100 105 110

ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc tat aag gct
384
Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala
115 120 125

aaa ccg agt tac ccc ccg act tac aaa
411
Lys Pro Ser Tyr Pro Pro Thr Tyr Lys
130 135

<210> 12
<211> 137
<212> PRT
<213> Artificial sequence

<400> 12
Ser Ser Glu Glu Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His
1 5 10 15

Tyr His Ser Gly Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr
20 25 30

Lys Gly Lys Tyr Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys
35 40 45

Asn Ser Gly Lys Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg
50 55 60

Lys Gly Tyr Lys Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro
65 70 75 80

Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr
85 90 95

Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr
100 105 110

Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala

115

120

125

Lys Pro Ser Tyr Pro Pro Thr Tyr Lys
130 135

<210> 13
<211> 591
<212> DNA
<213> Artificial Sequence

<220>
<223> Bioadhesive protein(mgfp-151) coding sequence

<220>
<221> CDS
<222> (1)..(591)
<223> Bioadhesive protein(mgfp-151)

<400> 13
gct aaa ccg tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca
48
Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro
1 5 10 15

ccg act tat aag gct aaa cct agc tat cca cct acg tac aaa gct aaa
96
Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys
20 25 30

ccg tct tac ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc
144
Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr
35 40 45

tat aag gct aaa ccg agt tac ccc ccg act tac aaa agt tct gaa gaa
192
Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ser Ser Glu Glu
50 55 60

tac aag ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt
240
Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly
65 70 75 80

ggt agt tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat
288
Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr
85 90 95

tac gga aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa
336
Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys
100 105 110

tac aag tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag
384
Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys
115 120 125

aag tat tat gga ggt agc agt gaa ttc gct aaa ccg tct tac ccg ccg
Page 7

432

Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro
 130 135 140

acc tac aaa gca aaa ccc tcg tac cca ccg act tat aag gct aaa cct
 480

Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro
 145 150 155 160

agc tat cca cct acg tac aaa gct aaa ccg tct tac ccg ccg act tac
 528

Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr
 165 170 175

aaa gca aaa ccg tcc tac cct ccg acc tat aag gct aaa ccg agt tac
 576

Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr
 180 185 190

ccc ccg act tac aaa
 591

Pro Pro Thr Tyr Lys
 195

<210> 14

<211> 197

<212> PRT

<213> Artificial Sequence

<400> 14

Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro
 1 5 10 15

Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys
 20 25 30

Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr
 35 40 45

Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ser Ser Glu Glu
 50 55 60

Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly
 65 70 75 80

Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr
 85 90 95

Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys
 100 105 110

Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys
 115 120 125

Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro
 130 135 140

Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro
 145 150 155 160

Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr
 165 170 175

Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr
180 185 190

Pro Pro Thr Tyr Lys
195

<210> 15
<211> 354
<212> DNA
<213> Artificial Sequence

<220>
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<220>
<221> CDS
<222> (1)..(351)
<223> Bioadhesive recombinant protein expressed in pMDG05 vector

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48
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1 5 10 15

ggt gga cag caa atg ggt cgg act ctg tac gac gat gac gat aag gat
96
Gly Gly Gln Gln Met Gly Arg Thr Leu Tyr Asp Asp Asp Asp Lys Asp
20 25 30

cga tgg gga tcc gag ctc gag atc tgc agc agt tct gaa gaa tac aag
144
Arg Trp Gly Ser Glu Leu Glu Ile Cys Ser Ser Ser Glu Glu Tyr Lys
35 40 45

ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt ggt agt
192
Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly Gly Ser
50 55 60

tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat tac gga
240
Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr Tyr Gly
65 70 75 80

aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa tac aag
288
Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys Tyr Lys
85 90 95

tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag aag tat
336
Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys Lys Tyr
100 105 110

tat gga ggt agc agt taa
354
Tyr Gly Gly Ser Ser

115

<210> 16
 <211> 117
 <212> PRT
 <213> Artificial Sequence

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 Gly Gly Gln Gln Met Gly Arg Thr Leu Tyr Asp Asp Asp Asp Lys Asp
 20 25 30
 Arg Trp Gly Ser Glu Leu Glu Ile Cys Ser Ser Ser Glu Glu Tyr Lys
 35 40 45
 Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly Gly Ser
 50 55 60
 Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr Tyr Gly
 65 70 75 80
 Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys Tyr Lys
 85 90 95
 Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys Lys Tyr
 100 105 110
 Tyr Gly Gly Ser Ser
 115

<210> 17
 <211> 456
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> construct for expression of Bioadhesive protein(mgfp-150) in
 pMDG150 vector

<220>
 <221> CDS
 <222> (1)..(453)
 <223> Bioadhesive recombinant protein expressed in pMDG150 vector

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 atg ggg ggt tct cat cat cat cat cat cat ggt atg gct agc gct aaa
 48
 Met Gly Gly Ser His His His His His His Gly Met Ala Ser Ala Lys
 1 5 10 15
 ccg tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca ccg act
 96
 Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr
 20 25 30
 tat aag gct aaa cct agc tat cca cct acg tac aaa gct aaa ccg tct
 144

Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser
 35 40 45
 tac ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc tat aag
 192
 Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys
 50 55 60
 gct aaa ccg agt tac ccc ccg act tac aaa ggc tgc agt tct gaa gaa
 240
 Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Gly Cys Ser Ser Glu Glu
 65 70 75 80
 tac aag ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt
 288
 Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly
 85 90 95
 ggt agt tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat
 336
 Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr
 100 105 110
 tac gga aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa
 384
 Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys
 115 120 125
 tac aag tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag
 432
 Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys
 130 135 140
 aag tat tat gga ggt agc agt taa
 456
 Lys Tyr Tyr Gly Gly Ser Ser
 145 150

<210> 18
 <211> 151
 <212> PRT
 <213> Artificial Sequence

<400> 18
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 1 5 10 15
 Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr
 20 25 30
 Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser
 35 40 45
 Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys
 50 55 60
 Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Gly Cys Ser Ser Glu Glu
 65 70 75 80
 Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly
 85 90 95

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Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr
100 105 110

Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys
115 120 125

Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys
130 135 140

Lys Tyr Tyr Gly Gly Ser Ser
145 150

<210> 19
<211> 540
<212> DNA
<213> Artificial Sequence

<220>
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pMDG051 vector

<220>
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<223> Bioadhesive recombinant protein expressed in pMDG051 vector

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48
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1 5 10 15

ggt gga cag caa atg ggt cgg act ctg tac gac gat gac gat aag gat
96
Gly Gly Gln Gln Met Gly Arg Thr Leu Tyr Asp Asp Asp Asp Lys Asp
20 25 30

cga tgg gga tcc gag ctc gag atc tgc agc agt tct gaa gaa tac aag
144
Arg Trp Gly Ser Glu Leu Glu Ile Cys Ser Ser Ser Glu Glu Tyr Lys
35 40 45

ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt ggt agt
192
Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly Gly Ser
50 55 60

tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat tac gga
240
Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr Tyr Gly
65 70 75 80

aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa tac aag
288
Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys Tyr Lys
85 90 95

tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag aag tat
336
Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys Lys Tyr

100

105

110

tat gga ggt agc agt gaa ttc gct aaa ccg tct tac ccg ccg acc tac

384

Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro Thr Tyr

115

120

125

aaa gca aaa ccc tcg tac cca ccg act tat aag gct aaa cct agc tat

432

Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr

130

135

140

cca cct acg tac aaa gct aaa ccg tct tac ccg ccg act tac aaa gca

480

Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala

145

150

155

160

aaa ccg tcc tac cct ccg acc tat aag gct aaa ccg agt tac ccc ccg

528

Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro

165

170

175

act tac aaa taa 540

Thr Tyr Lys

<210> 20

<211> 179

<212> PRT

<213> Artificial Sequence

<400> 20

Met Gly Gly Ser His His His His His Gly Met Ala Ser Met Thr

1

5

10

15

Gly Gly Gln Gln Met Gly Arg Thr Leu Tyr Asp Asp Asp Asp Lys Asp

20

25

30

Arg Trp Gly Ser Glu Leu Glu Ile Cys Ser Ser Ser Glu Glu Tyr Lys

35

40

45

Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly Gly Ser

50

55

60

Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr Tyr Gly

65

70

75

80

Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys Tyr Lys

85

90

95

Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys Lys Tyr

100

105

110

Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro Thr Tyr

115

120

125

Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr

130

135

140

Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala

145

150

155

160

Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro

Thr Tyr Lys

<210> 21
<211> 642
<212> DNA
<213> Artificial Sequence

<220>
<223> construct for expression of Bioadhesive protein(mgfp-151) in
pMDG151 vector

<220>
<221> CDS
<222> (1)..(639)
<223> Bioadhesive recombinant protein expressed in pMDG151 vector

<400> 21
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48
Met Gly Gly Ser His His His His His His Gly Met Ala Ser Ala Lys
1 5 10 15
ccg tct tac ccg ccg acc tac aaa gca aaa ccc tcg tac cca ccg act
96
Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr
20 25 30
tat aag gct aaa cct agc tat cca cct acg tac aaa gct aaa ccg tct
144
Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser
35 40 45
tac ccg ccg act tac aaa gca aaa ccg tcc tac cct ccg acc tat aag
192
Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys
50 55 60
gct aaa ccg agt tac ccc ccg act tac aaa ggc tgc agt tct gaa gaa
240
Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Gly Cys Ser Ser Glu Glu
65 70 75 80
tac aag ggt ggt tat tac cca ggc aat tcg aac cac tat cat tca ggt
288
Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly
85 90 95
ggt agt tat cac gga tcc ggc tac cat gga gga tat aag gga aag tat
336
Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr
100 105 110
tac gga aag gca aag aaa tac tat tat aaa tat aaa aac agc gga aaa
384
Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys
115 120 125

tac aag tat cta aag aaa gct aga aaa tac cat aga aag ggt tac aag
 432
 Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys
 130 135 140

aag tat tat gga ggt agc agt gaa ttc gct aaa ccg tct tac ccg ccg
 480
 Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro
 145 150 155 160

acc tac aaa gca aaa ccc tcg tac cca ccg act tat aag gct aaa cct
 528
 Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro
 165 170 175

agc tat cca cct acg tac aaa gct aaa ccg tct tac ccg ccg act tac
 576
 Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr
 180 185 190

aaa gca aaa ccg tcc tac cct ccg acc tat aag gct aaa ccg agt tac
 624
 Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr
 195 200 205

ccc ccg act tac aaa t aa
 642
 Pro Pro Thr Tyr Lys
 210

<210> 22
 <211> 213
 <212> PRT
 <213> Artificial Sequence

<400> 22
 Met Gly Gly Ser His His His His His Gly Met Ala Ser Ala Lys
 1 5 10 15
 Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr
 20 25 30
 Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser
 35 40 45
 Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys
 50 55 60
 Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Gly Cys Ser Ser Glu Glu
 65 70 75 80
 Tyr Lys Gly Gly Tyr Tyr Pro Gly Asn Ser Asn His Tyr His Ser Gly
 85 90 95
 Gly Ser Tyr His Gly Ser Gly Tyr His Gly Gly Tyr Lys Gly Lys Tyr
 100 105 110
 Tyr Gly Lys Ala Lys Lys Tyr Tyr Tyr Lys Tyr Lys Asn Ser Gly Lys
 115 120 125
 Tyr Lys Tyr Leu Lys Lys Ala Arg Lys Tyr His Arg Lys Gly Tyr Lys
 130 135 140

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Lys Tyr Tyr Gly Gly Ser Ser Glu Phe Ala Lys Pro Ser Tyr Pro Pro
 145 150 155 160
 Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro
 165 170 175
 Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr
 180 185 190
 Lys Ala Lys Pro Ser Tyr Pro Pro Thr Tyr Lys Ala Lys Pro Ser Tyr
 195 200 205
 Pro Pro Thr Tyr Lys
 210

<210> 23
 <211> 28
 <212> DNA
 <213> Artificial Sequence

<220>
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